

Abstract

A method for estimating symbol sequences from multiple transmitters which communicate with common receivers sharing the same medium is disclosed. This invention can be used in wireless communications and wireline communications such as in cable modem systems and digital subscriber loops to speed up joint detection of symbol sequences of multiple transmitters to achieve low error probability. For convenience, only applications of this invention to wireless communications employing multiple antennas are described herein. The requirement for matrix operations like matrix inverses increase with the logarithm of the number of symbols instead of the number of symbols as with techniques based on Cholesky decomposition.